



April 12, 1985

Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Dick Staments

RE: Form C-108
Caudill SWD #G-32
FM01-001-032

Dear Mr. Staments:

Attached please find two (2) copies of the Form C-108 on the above referenced well.

This well is currently permitted to dispose of produced water in the Devonian formation.

The casing in this well is in relatively poor condition. It is our plan to remove the old 6-5/8" casing from surface to 4950', and then cement a new string of 7" casing back to surface. We would like to obtain permission from the OCD to increase our injection interval from the Devonian 14472 - 14480' to the entire interval below our new casing 4950 - ~~14474~~ 14,480.

Please place this matter on the docket for the next available hearing date. If you have any questions, please feel free to contact our office.

Sincerely yours,

J. T. Janica Jr., PE
NRE, Agents for
Fannie Lee Mitchell Inc.

Enclosures

cc: chrono
file
J. Sexton - OCD Hobbs
F.L.M. Inc.

Case 8592

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☒ no
- II. Operator: Fannie Lee Mitchell
Address: P. O. Box 1327 Lovington, New Mexico 88260
Contact party: JT Janica NRE, Agents for FL Mitchell Phone: 397-6319
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☒ yes ☐ no
If yes, give the Division order number authorizing the project SWD-17.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
NA
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: J. T. Janica Title NRE, Agents for FL Mitchell

Signature: J. T. Janica Date: April 12, 1985

- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

Fannie Lee Mitchell
Caudill SWD G-32
C-108

- I. See Form C-108
- II. See Form C-108
- III. Well Data
Lease Name: Caudill SWD
Well #: G-32
Location: Unit G, 1980' FNL & 1830' FEL
Sec. 32, T-15-S, R-36-E
See Well Bore Sketch for information on casing,
tubing, and packer.
- IV. See Form C-108
- V. Attachment A is a map showing wells and leases
within a two mile radius with a 1/2 mile radius, area
of review, marked.
- VI. There are no wells within the area of review which
penetrate the proposed injection zone.
- VII. Operational Data
1. Average injection rate: 1300 bbls./day
Maximum injection rate: 1700 bbls./day
2. The system is closed.
3. Average injection pressure: 0
Maximum injection pressure: 0
- VIII. Proposed injection interval is from 4950' - TD of well
14480' (\pm 9530' interval).

<u>FORMATION</u>	<u>TOP</u>	<u>BASE</u>	<u>THICKNESS</u>	<u>LITHOLOGY</u>
San Andres	4775'	6420'	1645'	Dolomite, Anhydrite
Glorieta	6420'	7010'	590'	Sands, Dolomite, Anhydrite
Clearfork	7010'	7612'	602'	Anhydritic Dolomite
Tubb	7612'	8370'	758'	Siltstone, Shale, Dolomite, Anhydrite
Abo	8370'	9852'	1482'	Shale, Dolomite, Anhydrite
Hueco	9852'	10917'	1065'	Limestone, Shale, Dolomite
Penn	10917'	13190'	2273'	Limestone, Shale
Miss	13190'	14031'	841'	Limestone, Chert
Woodford	14031'	14171'	140'	Shale
Devonian	14171'	14433'	262'	Limestone, Dolomite

Fannie Lee Mitchell
Caudill SWD G-32
C-108

- VIII. Depth to base of the Ogallala fresh water aquifer in area is 350'±. No known fresh water occurs below this depth in the immediate area.
- IX. No stimulation program is planned.
- X. Well logs are on file with the Oil Conservation Division.
- XI. Attached are water analyses from wells within the area of review.
- XII. We have examined available geological and engineering data and find no evidence of open faults or other hydrological connection between the proposed disposal zone and any underground source of drinking water.
- XIII. We are contacting the offset operators within the area of review via mail (return receipt requested) and have furnished them with a copy of this application. We will furnish copies of the return receipts to the Commission when we receive them.

**NEW-TEX
LAB**P. O. BOX 1181
HOBBS, N.M. 88240

No. 6795

Run No.

Date of Run 4-11-85

Date Secured 4-10-85

CERTIFICATE OF ANALYSIS

A Sample of L. Richards (650 Northeast)

Secured from Fannie Lee Mitchell

At Box 1327

Lovington, N. Mex. 88260

Secured by

Time

Date

Sampling conditions Press

Temp.

Station No.

SPECIFIC GRAVITY = 1

TOTAL DISSOLVED SOLIDS = 587

PH = 7.17

ME/L

MG/L

CATIONS

CALCIUM	(CA)+2	4	80.1
MAGNESIUM	(MG)+2	2.2	26.8
SODIUM	(NA), CALC.	2.4	56.7

ANIONS

BICARBONATE	(HCO3)-1	3.2	195.
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	2.4	113.
CHLORIDES	(CL)-1	3	110

DISSOLVED GASES

CARBON DIOXIDE	(CO2)	NOT RUN
HYDROGEN SULFIDE	(H2S)	NOT RUN
OXYGEN	(O2)	NOT RUN

IRON(TOTAL)	(FE)	NOT RUN
BARIUM	(BA)+2	NOT RUN
MANGANESE	(MN)	NOT RUN

IONIC STRENGTH (MOLAL) = .013

SCALING INDEX

TEMP

30C

86F

CARBONATE INDEX

1.56

CALCIUM CARBONATE SCALING

LIKELY

CALCIUM SULFATE INDEX

-16.

CALCIUM SULFATE SCALING

UNLIKELY



NEW-TEX LAB

P. O. BOX 1161
HOBBS, N.M. 88240

CERTIFICATE OF ANALYSIS

No. 6796
Run No. _____
Date of Run 4-11-85
Date Secured 4-10-85

A Sample of Jimmy Williams (600 Yards East)
Secured from Fannie Lee Mitchell
At Box 1327 Secured by _____
Lovington, N. Mex. 88260 Time _____ Date _____
Sampling conditions _____ Press _____
Temp. _____ Station No. _____

SPECIFIC GRAVITY = 1
TOTAL DISSOLVED SOLIDS = 985
PH = 6.88

	ME/L	MG/L
CATIONS		
CALCIUM (CA)+2	9	180.
MAGNESIUM (MG)+2	1.4	17.0
SODIUM (NA), CALC.	4.1	95.1

	ME/L	MG/L
ANIONS		
BICARBONATE (HCO3)-1	3.4	207.
CARBONATE (CO3)-2	0	0
HYDROXIDE (OH)-1	0	0
SULFATE (SO4)-2	3.1	295
CHLORIDES (CL)-1	5	190

	ME/L	MG/L
DISSOLVED GASES		
CARBON DIOXIDE (CO2)	NOT RUN	
HYDROGEN SULFIDE (H2S)	NOT RUN	
OXYGEN (O2)	NOT RUN	

	ME/L	MG/L
IRON(TOTAL) (FE)	NOT RUN	
BARIUM (BA)+2	NOT RUN	
MANGANESE (MN)	NOT RUN	

IONIC STRENGTH (MOLAL) = .023

SCALING INDEX	TEMP
	30C
	86F
CARBONATE INDEX	.999
CALCIUM CARBONATE SCALING	LIKELY
CALCIUM SULFATE INDEX	-12.
CALCIUM SULFATE SCALING	UNLIKELY



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NEW-TEX LAB

P. O. BOX 1181
HOBBS, N.M. 88240

CERTIFICATE OF ANALYSIS

No. 6797

Run No.

Date of Run 4-11-85

Date Secured 4-10-85

A Sample of Mobil Oil Northeast (500 Yards)

Secured from Fannie Lee Mitchell

At Box 1327

Secured by

Lovington, N. Mex. 88260

Time

Date

Sampling conditions Press

Temp.

Station No.

SPECIFIC GRAVITY = 1

TOTAL DISSOLVED SOLIDS = 952

PH = 6.63

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	8	160.
MAGNESIUM	(MG)+2	1.4	17.0
SODIUM	(NA), CHLO.	4.1	95.6

ANIONS			
BICARBONATE	(HCO3)-1	5.4	329.
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	4.1	200
CHLORIDES	(CL)-1	4	150

DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	

IRON(TOTAL)	(FE)	NOT RUN
BARIUM	(BA)+2	NOT RUN
MANGANESE	(MN)	NOT RUN

IONIC STRENGTH (MOLAL) = .021

SCALING INDEX	TEMP
	30C
	86F
CARBONATE INDEX	1.02
CALCIUM CARBONATE SCALING	LIKELY
CALCIUM SULFATE INDEX	-13.
CALCIUM SULFATE SCALING	UNLIKELY



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**NEW-TEX
LAB**P. O. BOX 1181
HOBBS, N.M. 88240**CERTIFICATE OF ANALYSIS**No. 6798
Run No. _____
Date of Run 4-11-85
Date Secured 4-10-85A Sample of Lea County Coop Well #3 (400 Yards)
Secured from Fannie Lee Mitchell
At Box 1327 Secured by _____
Lovington, N. Mex. 88260 Time _____ Date _____Sampling conditions _____ Press _____
Temp. _____

Station No. _____

SPECIFIC GRAVITY = 1
TOTAL DISSOLVED SOLIDS = 608
PH = 6.82

		ME/L	MG/L
CATIONS			
CALCIUM	(CA)+2	3.6	72.1
MAGNESIUM	(MG)+2	1	12.1
SODIUM	(NA), CALC.	4.2	97.4

ANIONS			
BICARBONATE	(HCO3)-1	3.6	219.
CARBONATE	(CO3)-2	0	0
HYDROXIDE	(OH)-1	0	0
SULFATE	(SO4)-2	2.2	107.
CHLORIDES	(CL)-1	3	100

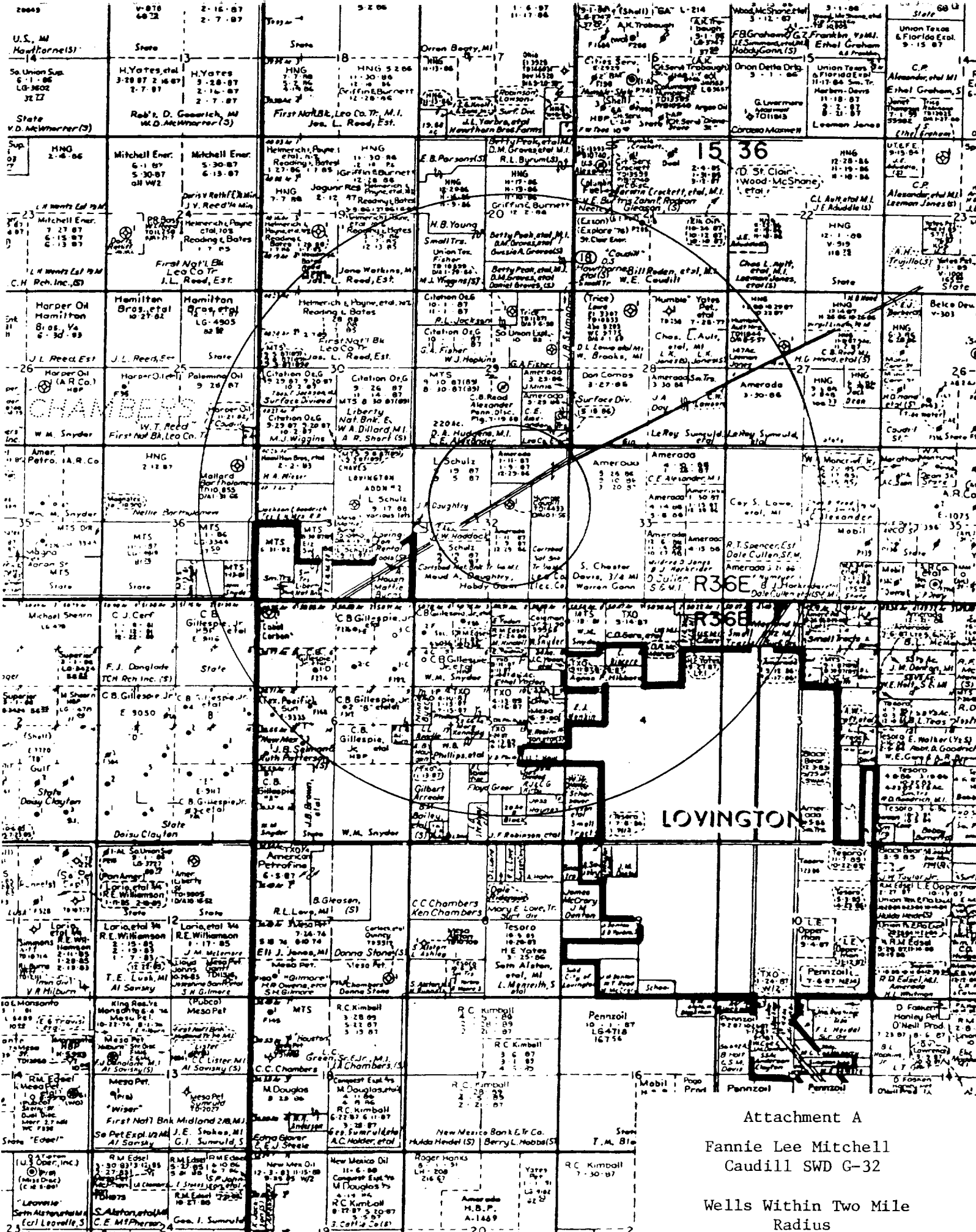
DISSOLVED GASES			
CARBON DIOXIDE	(CO2)	NOT RUN	
HYDROGEN SULFIDE	(H2S)	NOT RUN	
OXYGEN	(O2)	NOT RUN	

IRON(TOTAL)	(FE)	NOT RUN	
BARIUM	(BA)+2	NOT RUN	
MANGANESE	(MN)	NOT RUN	

IONIC STRENGTH (MOLAL) = .012

SCALING INDEX	TEMP
	30C
	86F
CARBONATE INDEX	1.30
CALCIUM CARBONATE SCALING	LIKELY
CALCIUM SULFATE INDEX	-17.
CALCIUM SULFATE SCALING	UNLIKELY





Attachment A
Fannie Lee Mitchell
Caudill SWD G-32
Wells Within Two Mile
Radius

WELL BORE SKETCH

OPERATOR/LEASE/WELL Fannie Lee Mitchell / Caudill SWD / G-32
NRE JOB NUMBER FM01-001-032 DATE April 12, 1985
FIELD/POOL Caudill / Devonian
PLUG BACK DEPTH 14480' KB ELEVATION 3901' GL

Hole Size 17-1/2"

SURFACE CASING:
Size 13-3/8" Weight Grade
Set at 366.58' with 375 Sacks Cement
Circulate Yes Sacks to Surface
Remarks: Cement was circulated. No record of number
of sacks. Casing tested and held.

Hole Size 12-1/4"

INTERMEDIATE CASING:
Size 9-5/8" Weight Grade
Set at 4945' with 325 + 2480 Sacks Cement
Circulate Yes Sacks to Surface
Cement Top: Calculated Temperature Survey
Remarks: Cement was circulated. No record of number
of sacks. 2 stage cement job. DV at 4490'.
Casing tested and held.

Hole Size 8-3/4"

PRODUCTION CASING:
Size 6-5/8" Weight Grade
Set at 14210' with 200 Sacks Cement
Cement Top: Calculated Temperature Survey
Remarks: Tested ok.

2-7/8" Tubing
6958'
X-Over

TUBING:
Size 2-7/8"&3-1/2" Weight Grade
Number of Joints * Set at 14145'
Packer Set at 14145'
Bottom Arrangement: Backer Model DA36 Packer,
7187' Plastic coated 3-1/2" tubing & 6958' Plastic
coated 2-7/8" tubing.

3-1/2" Tubing
7187'

RODS:
Size NA Number NA
Gas Anchor Set at
Pump Set at
Arrangement:

Baker Model
DA36 Packer
Set at 14145'